

DID YOU KNOW?

USMC SAFETY & FORCE PRESERVATION



SEPT 2011



NEED A QUICK BOOST?

Think twice before grabbing that energy drink...

Ever notice that the longest part of the day seems to be after the lunch hour - where the minutes pass glacially slow, or you're fighting to keep at least one eye open while staring at your computer monitor, or you've awakened after your head has hit the desk from nodding off? Has it ever appeared that time stands still while on duty at 0300 or on night crew? Ever drive late at night with your head out the window or slap yourself in the face a few times to stay awake? For many, the solution to this feeling is a no-brainer: just grab an energy drink. However, is that *really* the best solution?

An "energy drink" is a beverage containing some form of legal stimulant, usually caffeine in combination with other ingredients such as taurine, guarana, and B vitamins, which claims to give the consumer a short term boost of energy. The term "energy drink" was created by the beverage industry and is not recognized by the United States Food and Drug Administration (FDA) or the United States Department of Agriculture (USDA). Energy drinks were developed in response to public demand for a dietary consumable or supplement that would provide a boost in energy level plus additional vitamins and other "faddish" ingredients in a one-stop shopping product. The pace of the 21st century has seen increasing time demands on daily schedules resulting in a more fatigued individual with less time for eating and sleeping. As such, energy drinks have quickly exploded in a receptive market since they claim to offer an energy boost, vitamins and often times a nutritional value.

Who is the Target Market of Energy Drinks?

The commercial market for energy drinks is similar to the same individuals that join the military: young, "type-A" individuals who could be considered thrill seekers or "extreme" in nature.

A quick review of advertisements on TV, on the internet or in magazines reveals the beverage industry is in a full court press to market their energy drinks specifically to extreme sports enthusiasts and those who naturally operate on the extreme side of life. For this cadre of individuals, there is no such thing as moderation and it is not uncommon for them to consume multiple energy drinks on a daily basis. The typical mentality held by this group, and Americans in general, is that if less is good then more must be even better - a highly prized cash cow for manufacturers!

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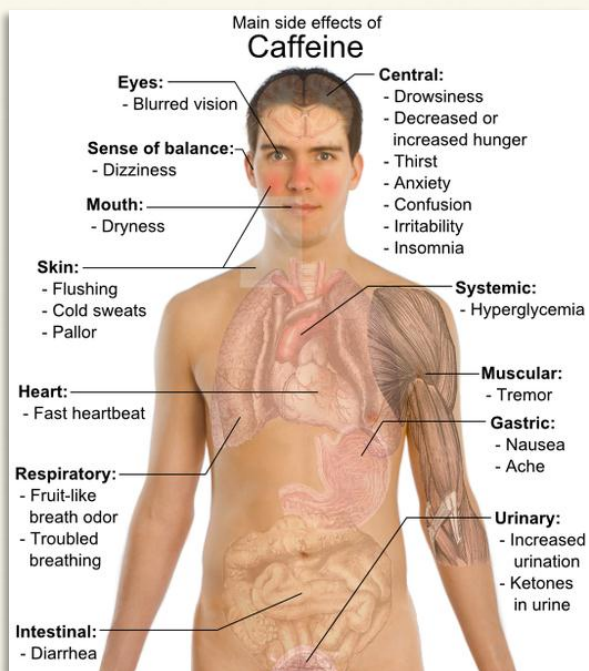
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The “Magical” Ingredients?

The one thing *most* energy drinks have in common is they contain a large amount of their “active ingredients” plus caffeine and/or sugar. More often than not, the boost you receive from your favorite energy drink may be simply attributed to an extreme sugar rush. Additionally, these beverages may contain a hodgepodge of dietary supplements such as vitamins and herbal extracts. Common ingredients are:

- **Guarana Seed** - an effective stimulant found in a climbing plant native to the Amazon basin and Brazil, its fruit (about the size of a coffee bean) contains approximately twice as much caffeine as a coffee bean.
- **Ginseng** - a fleshy root grown in eastern Asia, it is believed to help reduce stress and increase energy levels.
- **Ginkgo Biloba** – one of the oldest living tree species, the extract of ginkgo leaves is believed to enhance memory.
- **Taurine** – an organic amino acid and a major constituent of bile naturally produced by the human body in the lower intestine, it is believed to help regulate heart rhythm and muscle contractions.
- **Inositol** – a member of the vitamin B complex (although not a vitamin itself) which functions as the basis in signaling and relaying messages between cells as well as a number of other biological processes.

As you can probably tell from this list, energy drinks are a deceptive combination of sugary soft drinks and pseudo-nutritional dietary supplement formulated specifically for a pleasing taste to young people’s palates.



Body Composition

The first thing we as consumers need to understand is that anything we ingest into our bodies causes a chemical reaction. One mistake most people make is the assumption that what works with my friend will work for me: that energy drinks will have the same effect every time, to every person, no matter which drink is bought off the shelf. Our personal genetic code makes each of us unique individuals with accompanying advantages and disadvantages. The physiological nuances of one’s body composition in combination with fitness level, hydration status, underlying medical conditions whether known or unknown, medication use (prescribed or self) and supplement use, etc. can inject numerous variables into this equation that need to be considered when consuming energy drinks. Another way to look at it is that we all know alcohol affects everyone differently so there is no reason to assume otherwise with energy drinks.



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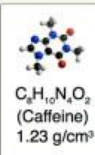
Dangers of Ingredients

The main stimulatory ingredient in energy drinks is caffeine. A standard 12 ounce soda contains approximately 18-48 mg of caffeine. Most energy drinks contain at least as much caffeine as a standard eight ounce cup of coffee (approx. 80 mg). To put things in perspective, though, many energy drinks have 3-5 times the amount of caffeine as regular sodas. While the FDA limits caffeine content to 65 mg per serving of a food or beverage, or a 0.02% caffeine limit for soft drinks and cola-type beverages (a max of 71 mg per 12 ounce serving), energy drinks are currently not regulated by the FDA and consequently these beverages can contain as much as 300 mg of caffeine per serving.

Compound that with the fact many energy drinks contain more than one serving, and no one drinks only half the can. According to MayoClinic.com, up to 300 mg of caffeine per day is not usually harmful for most people. An increase in side effects may be observed if one consumes from 500-600 mg per day, and the FDA warns 600 mg is too much. The adverse effects associated with the consumption of high amounts of caffeine (400 mg or more) are well documented and include nervousness, irritability, inability to sleep, anxiety, increased urination, diarrhea, abnormal heart rhythms (fast or pounding heart), dizziness, decreased bone levels and stomach upset.

The remaining ingredients found in energy drinks just complicate things. Most energy drinks contain high levels of refined sugar or high fructose corn syrup. These two ingredients can lead to weight gain and type-2 diabetes as well as a large crash effect after the sugar high. Energy drinks also include a variety of unregulated herbal stimulants and naturally organic blends such as guarana, taurine, ginseng and B vitamins. Stimulants such as guarana and ginseng are often added to enhance the effects of the caffeine and the long term effects of high levels of all of these unregulated products are not well understood. Because of this, many manufacturers don't list these ingredients on their product labels.

Discovered in 1819 by German chemist Friedrich Ferdinand Runge, caffeine is a crystalline xanthine alkaloid that is a psychoactive stimulant drug.



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Mixing Energy Drinks with Alcohol

It is a common misperception that energy drinks will counter the effects of alcohol. There is nothing further from the truth. Combining energy drinks and alcohol can trick the brain into making people think they are sober, or even sober enough to function “normally”, when in actuality they are not. The stimulants in energy drinks actually aggravate intoxication – people may not perceive that they are intoxicated as readily when also imbibing a stimulant (i.e. people think they are sober when indeed they are not). One obvious reason for this is that alcohol and energy drink users may drink more alcohol and misjudge their capabilities because the stimulatory effects of the energy drink reduces drowsiness felt by increasingly intoxicated people. This condition is known as “wide awake and drunk” as seen with the Cleveland Browns wide receiver Donte Stallworth who in 2009, after drinking numerous shots of liquor and Red Bull, killed a pedestrian with his car and claimed he did not feel intoxicated at the time of the accident.



Alternatives to Energy Drinks

Today's youth are often attracted to anything fast-paced, action-packed, and/or cosmetically appealing. Most energy drinks are purposely marketed with bold graphics and sexy commercials to capture this young audience. The alternative, on the other hand, is rather dull in comparison. The best way to maintain alertness and energy is to get plenty of sleep and proper nutrition. Most Americans only get approximately 6.5 hours of sleep per night which is well short of the recommended eight hours. Sleep loss is cumulative in nature and small amounts over time can add up to an insurmountable sleep debt affecting daytime alertness and performance. Eating right, per the USDA's food pyramid (now the food plate), as well as staying properly hydrated can also have a profound effect on one's well-being.

Bottom Line

The age old adage applies, “everything in moderation”. If you feel the need for an energy drink ask yourself “why” and do a quick evaluation of your current lifestyle. While counter intuitive, it's easier to adjust your diet, sleep habits and exercise routine to get the extra energy you need throughout the day than to decide which energy drink is best. If you should choose to partake, then read the product labels to know what's in the drink and what the serving size is. Check for any type of warning or caution on the product. Also, keep track of your caffeine consumption to minimize the potential for adverse effects. Finally, consider that many energy drink products are mainly marketing devices to generate money for the beverage companies and that a cup of coffee used strategically during the day can be just as beneficial and easier on the wallet.

